

61-58.15

Stage 2 Disinfection Byproducts Requirements

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A. Applicability.

This part R.61-58.15 applies to community water systems and non-transient non-community water systems that use a primary or residual disinfectant other than ultraviolet light or deliver water that has been treated with a primary or residual disinfectant other than ultraviolet light.

B. General Requirements.

(1) The requirements of this part R.61-58.15 constitute national primary drinking water regulations. The regulations in this part establish monitoring and other requirements for achieving compliance with maximum contaminant levels based on locational running annual averages (LRAA) for total trihalomethanes (TTHM) and haloacetic acids (five)(HAA5), and for achieving compliance with maximum residual disinfectant levels for chlorine and chloramine for certain consecutive systems.

(2) Schedule – Systems subject to this part R.61-58.15 must comply with the requirements of this part on the following schedule:

(a) Systems that are not part of a combined distribution system and systems that serve the largest population in the combined distribution system and serve 100,000 people or greater must comply with this part R.61-58.15 by April 1, 2012.

(b) Systems that are not part of a combined distribution system and systems that serve the largest population in the combined distribution system and serve between 50,000 and 99,999 people must comply with this part R.61-58.15 by October 1, 2012.

(c) Systems that are not part of a combined distribution system and systems that serve the largest population in the combined distribution system and serve between 10,000 and 49,999 people must comply with this part R.61-58.15 by October 1, 2013.

(d) Systems that are not part of a combined distribution system and systems that serve the largest population in the combined distribution system and serve less than 10,000 must comply with this part R.61-58.15 by October 1, 2013 if no *Cryptosporidium* monitoring is required under R.61-58.10.K(2)(a)(iv), or by October 1, 2014 if *Cryptosporidium* monitoring is required under R.61-58.10.K(2)(a)(iv).

(e) Systems that are part of a combined distribution system must comply with this part R.61-58.15 at the same time as the system with the earliest compliance date in the combined distribution system.

(f) The Department may grant systems up to an additional 24 months from the specified date for compliance with MCLs and operational evaluation levels if capital improvements are required to comply with an MCL.

(g) Systems monitoring frequency is specified in R.61-58.15.C(1)(b)

(i) If systems are required to conduct quarterly monitoring, then they must begin monitoring in the first full calendar quarter that includes the compliance date in this paragraph (2).

(ii) If systems are required to conduct monitoring at a frequency that is less than quarterly, then they must begin monitoring in the calendar month recommended in the IDSE report prepared under R.61-58.14.C or R.61-58.14.D or the calendar month identified in the monitoring plan developed under R.61-58.15.D no later than 12 months after the compliance date in this paragraph (2).

(h) If systems are required to conduct quarterly monitoring, then they must make compliance calculations at the end of the fourth calendar quarter that follows the compliance date and at the end of each subsequent quarter (or earlier if the LRAA calculated based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters). If systems are required to conduct monitoring at a frequency that is less than quarterly, then they must make compliance calculations beginning with the first compliance sample taken after the compliance date.

(i) Reserved.

(j) For the purpose of the schedule in this paragraph (2), the Department may determine that the combined distribution system does not include certain consecutive systems based on factors such as receiving water from a wholesale system only on an emergency basis or receiving only a small percentage and small volume of water from a wholesale system. The Department may also determine that the combined distribution system does not include certain wholesale systems based on factors such as delivering water to a consecutive system only on an emergency basis or delivering only a small percentage and small volume of water to a consecutive system.

(3) Monitoring and compliance.

(a) In order for systems that are required to monitor quarterly to comply with MCLs in R.61-58.5.P(2)(b), they must calculate LRAAs for TTHM and HAA5 using monitoring results collected under this part R.61-58.15 and determine that each LRAA does not exceed the MCL. If the system fails to complete four consecutive quarters of monitoring, they must calculate compliance with the MCL based on the average of the available data from the most recent four quarters. If the system takes more than one sample per quarter at a monitoring location, they must average all samples taken in the quarter at that location to determine a quarterly average to be used in the LRAA calculation.

(b) In order for systems required to monitor yearly or less frequently to determine compliance with MCLs in R.61-58.5.P(2)(b), they must determine that each sample taken is less than the MCL. If any sample exceeds the MCL, the system must comply with the requirements of section R.61-58.15.G. If no sample exceeds the MCL, the sample result for each monitoring location is considered the LRAA for that monitoring location.

(4) Systems are in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating an LRAA if they fail to monitor.

C. Routine Monitoring.

(1) Monitoring

(a) If a system submitted an IDSE report, they must begin monitoring at the locations and months recommended in the IDSE report submitted under section R.61-58.14.G following the schedule in R.61-58.15.B(2), unless the Department requires other locations or additional locations after its review. If the system submitted a 40/30 certification under section R.61-58.14.E or they qualified for a very small system waiver under section R.61-58.14.F or they are a non-transient non-community water system serving less than 10,000 people, they must monitor at the location(s) and dates identified in their monitoring plan in R.61-58.13.C(6), updated as required by section R.61-58.15.D.

(b) Systems must monitor at no fewer than the number of locations identified in this paragraph (1)(b).

| Source water type | Population size category | Monitoring frequency | Distribution system monitoring locations per monitoring period |
|-------------------|--------------------------|----------------------|----------------------------------------------------------------|
| Subpart H | Less than 500 | per year | 2 |
| Subpart H | 500 – 3,300 | per quarter | 2 |
| Subpart H | 3,301 – 9,999 | per quarter | 2 |
| Subpart H | 10,000 – 49,999 | per quarter | 4 |
| Subpart H | 50,000 – 249,999 | per quarter | 8 |
| Subpart H | 250,000 – 999,999 | per quarter | 12 |
| Subpart H | 1,000,000 – 4,999,999 | per quarter | 16 |
| Subpart H | 5,000,000 or greater | per quarter | 20 |
| Ground water | Less than 500 | per year | 2 |
| Ground water | 500 – 9,999 | per year | 2 |
| Ground water | 10,000 – 99,999 | per quarter | 4 |
| Ground water | 100,000 – 499,999 | per quarter | 6 |
| Ground water | 500,000 or greater | per quarter | 8 |

(i) All systems must monitor during month of highest DBP concentrations.

(ii) Systems on quarterly monitoring must take dual sample sets every 90 days at each monitoring location, except for subpart H systems serving 500- 3,300. Systems on annual monitoring and subpart H systems serving 500-3,300 are required to take individual TTHM and HAA5 samples (instead of a dual sample set) at the locations with the highest TTHM and HAA5 concentrations, respectively. Only one location with a dual sample set per monitoring period is needed if highest TTHM and HAA5 concentrations occur at the same location (and month, if monitored annually).

(c) Undisinfected systems that begin using a disinfectant other than UV light after the dates in R.61-58.14 for complying with the Initial Distribution System Evaluation requirements must consult with the Department to identify compliance monitoring locations for this part R.61-58.15. The systems must then develop a monitoring plan under R.61-58.15.D that includes those monitoring locations.

(2) Analytical Methods – Analyses used to determine compliance with this part R.61-58.15 must be conducted using an approved method listed in 40 CFR 141.131 (1-04-06 edition) for TTHM and HAA5 analyses.

(3) Certified Laboratory - Analyses under this part R.61-58.15 for disinfection byproducts must be conducted by a certified laboratory.

D. Stage 2 DBP Monitoring Plans.

(1) Monitoring Plan Development.

(a) Systems must develop and implement a monitoring plan to be kept on file for Department and public review. The monitoring plan must contain the elements in paragraphs (1)(a)(i) through (1)(a)(iv) of this section and be complete no later than the date the system conducts initial monitoring under this part R.61-58.15.

(i) Monitoring locations;

(ii) Monitoring dates;

(iii) Compliance calculation procedures; and.

(iv) Monitoring plans for any other systems in the combined distribution system if the Department has reduced monitoring requirements under the authority granted in 40 CFR 142.16(m) (1-04-06 edition).

(b) For systems that were not required to submit an IDSE report under either section R.61-58.14.C or section 61-58.14.D, and do not have sufficient R.61-58.13 monitoring locations to identify the required number of R.61-58.15 compliance monitoring locations indicated in R.61-58.14.G(2), they must identify additional locations by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of compliance monitoring locations have been identified. Systems must also provide the rationale for identifying the locations as having high levels of TTHM or HAA5. If a system has more R.61-58.13 monitoring locations than required for R.61-58.15 compliance monitoring in R.61-58.14.G(2), they must identify which locations they will use for R.61-58.15 compliance monitoring by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of R.61-58.15 compliance monitoring locations have been identified.

(2) Subpart H systems serving > 3,300 people must submit a copy of the monitoring plan required under this section to the Department prior to the date the system begins initial monitoring under this part R.61-58.15, unless the IDSE report submitted under R.61-58.14 contains all the information required by this section.

(3) Systems may revise their monitoring plan to reflect changes in treatment, distribution system operations and layout (including new service areas), or other factors that may affect TTHM or HAA5 formation, or for Department approved reasons, after consultation with the Department regarding the need for changes and the appropriateness of changes. If a system changes monitoring locations, they must replace existing compliance monitoring locations that have the lowest LRAA with new locations that reflect the current distribution system locations with expected high TTHM or HAA5 levels. The Department may also require modifications in the monitoring plan. Subpart H systems serving > 3,300 people, must submit a copy of their modified monitoring plan to the Department prior to the date they are required to comply with the revised monitoring plan.

E. Reduced Monitoring.

(1) Systems may reduce monitoring to the level specified in this paragraph (1) any time the LRAA is less than or equal to 0.040 mg/L for TTHM and less than or equal to 0.030 mg/L for HAA5 at all monitoring locations. Only data collected under the provisions of R.61-58.15 or R.61-58.13 may be used to qualify for reduced monitoring. In addition, the source water annual average TOC level, before any treatment, must be less than or equal to 4.0 mg/L at each treatment plant treating surface water or ground water under the direct influence of surface water, based on monitoring conducted under either R.61-58.13.C(2)(a)(vi) or R.61-58.13.C(4). Systems on reduced monitoring under this section that are required to monitor quarterly must take dual sample sets every 90 days.

(a) Subpart H systems serving less than 500 people may not reduce monitoring.

(b) Subpart H systems serving between 500 and 3,300 people and meeting the criteria in this paragraph (1) may reduce monitoring to one (1) TTHM sample per year taken at the location and during the quarter with the highest TTHM single measurement, and one (1) HAA5 sample per year taken at the location and during the quarter with the highest HAA5 single measurement. One (1) dual sample set per year may be taken if the highest TTHM and HAA5 measurements occurred at the same location during the same quarter.

(c) Subpart H systems serving between 3,301 and 9,999 people and meeting the criteria in this paragraph (1) may reduce monitoring to one (1) dual sample set per year taken at the location and during the quarter with the highest TTHM single measurement, and one (1) dual sample set per year taken at the location and during the quarter with the highest HAA5 single measurement.

(d) Subpart H systems serving between 10,000 and 49,999 people and meeting the criteria in this paragraph (1) may reduce monitoring to two (2) dual sample sets per quarter taken at the locations with the highest TTHM and HAA5 LRAAs.

(e) Subpart H systems serving between 50,000 and 249,999 people and meeting the criteria in this paragraph (1) may reduce monitoring to four (4) dual sample sets per quarter taken at the locations with the two highest TTHM and two highest HAA5 LRAAs.

(f) Subpart H systems serving between 250,000 and 999,999 people and meeting the criteria in this paragraph (1) may reduce monitoring to six (6) dual sample sets per quarter taken at the locations with the three highest TTHM and three highest HAA5 LRAAs.

(g) Subpart H systems serving between 1,000,000 and 4,999,999 people and meeting the criteria in this paragraph (1) may reduce monitoring to eight (8) dual sample sets per quarter taken at the locations with the four highest TTHM and four highest HAA5 LRAAs.

(h) Subpart H systems serving 5,000,000 or more people and meeting the criteria in this paragraph (1) may reduce monitoring to ten (10) dual sample sets per quarter taken at the locations with the five highest TTHM and five highest HAA5 LRAAs.

(i) Ground water systems serving less than 500 people and meeting the criteria in this paragraph (1) may reduce monitoring to one (1) TTHM sample every third year taken at the location and during the quarter with the highest TTHM single measurement, and one (1) HAA5 sample every third year taken at the location and during the quarter with the highest HAA5 single measurement. One (1) dual sample set every third year may be taken if the highest TTHM and HAA5 measurements occurred at the same location during the same quarter.

(j) Ground water systems serving between 500 and 9,999 people and meeting the criteria in this paragraph (1) may reduce monitoring to one (1) TTHM sample per year taken at the location and during the quarter with the highest TTHM single measurement, and one (1) HAA5 sample per year taken at the location and during the quarter with the highest HAA5 single measurement. One (1) dual sample set per year may be taken if the highest TTHM and HAA5 measurements occurred at the same location during the same quarter.

(k) Ground water systems serving between 10,000 and 99,999 people and meeting the criteria in this paragraph (1) may reduce monitoring to one (1) dual sample set per year taken at the location and during the quarter with the highest TTHM single measurement and one (1) dual sample set per year taken at the location and during the quarter with the highest HAA5 single measurement.

(l) Ground water systems serving between 100,000 and 499,999 people and meeting the criteria in this paragraph (1) may reduce monitoring to two (2) dual sample sets per quarter taken at the locations with the highest TTHM and HAA5 LRAAs.

(m) Ground water systems serving 500,000 or more people and meeting the criteria in this paragraph (1) may reduce monitoring to four (4) dual sample sets per quarter taken at the locations with the two highest TTHM and two highest HAA5 LRAAs.

(2) Systems on reduced monitoring may remain on reduced monitoring as long as the TTHM LRAA is less than or equal to 0.040 mg/L and the HAA5 LRAA is less than or equal to 0.030 mg/L at each monitoring location (for systems with quarterly reduced monitoring) or each TTHM sample is less than or equal to 0.060 mg/L and each HAA5 sample is less than or equal to 0.045 mg/L (for systems with annual or less frequent monitoring). In addition, the source water annual average TOC level, before any treatment, must be less than or equal to 4.0 mg/L at each treatment plant treating surface water or ground water under the direct influence of surface water, based on monitoring conducted under either R.61-58.13.C(2)(a)(vi) or R.61-58.13.C(4).

(3) If the LRAA based on quarterly monitoring at any monitoring location exceeds either 0.040 mg/L for TTHM or 0.030 mg/L for HAA5 or if the annual (or less frequent) sample at any location exceeds either 0.060 mg/L for TTHM or 0.045 mg/L for HAA5, or if the source water annual average TOC level, before any treatment, is greater than 4.0 mg/L at any treatment plant treating surface water or ground water under the direct influence of surface water, the system must resume routine monitoring under R.61-58.15.C or begin increased monitoring if R.61-58.15.G applies.

(4) Systems may be returned to routine monitoring at the Department's discretion.

F. Additional Requirements for Consecutive Systems.

A consecutive system that does not add a disinfectant but delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light, must comply with analytical and monitoring requirements for chlorine and chloramines in R.61-58.13.B and R.61-58.13.C(3)(a) and the compliance requirements in R.61-58.13.D(3)(a) beginning April 1, 2009, unless required earlier by the Department, and report monitoring results under R.61-58.13.E(3).

G. Conditions Requiring Increased Monitoring.

(1) If a system is required to monitor at a particular location annually or less frequently than annually under R.61-58.15.C or R.61-58.15.E, they must increase monitoring to dual sample sets once per quarter (taken every 90 days) at all locations if a TTHM sample is greater than 0.080 mg/L or a HAA5 sample is greater than 0.060 mg/L at any location.

(2) A system is in violation of the MCL when the LRAA exceeds the R.61-58.15 MCLs in R.61-58.5.P, calculated based on four consecutive quarters of monitoring (or the LRAA calculated based on fewer than four quarters of data if the MCL would be exceeded regardless of the monitoring results of subsequent quarters). A system is in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating an LRAA if they fail to monitor.

(3) A system may return to routine monitoring once they have conducted increased monitoring for at least four consecutive quarters and the LRAA for every monitoring location is less than or equal to 0.060 mg/L for TTHM and less than or equal to 0.045 mg/L for HAA5.

H. Operational Evaluation Levels.

(1) A system has exceeded the operational evaluation level at any monitoring location where the sum of the two previous quarters' TTHM results plus twice the current quarter's TTHM result, divided by 4 to determine an average, exceeds 0.080 mg/L, or where the sum of the two previous quarters' HAA5 results plus twice the current quarter's HAA5 result, divided by 4 to determine an average, exceeds 0.060 mg/L.

(2) Operational Evaluations

(a) If a system exceeds the operational evaluation level, they must conduct an operational evaluation and submit a written report of the evaluation to the Department no later than 90 days after being notified of the analytical result that causes them to exceed the operational evaluation level. The written report must be made available to the public upon request.

(b) The operational evaluation must include an examination of system treatment and distribution operational practices, including storage tank operations, excess storage capacity, distribution system flushing, changes in sources or source water quality, and treatment changes or problems that may contribute to TTHM and HAA5 formation and what steps could be considered to minimize future exceedances.

(i) A system may request and the Department may allow them to limit the scope of their evaluation if they are able to identify the cause of the operational evaluation level exceedance.

(ii) A request to limit the scope of the evaluation does not extend the schedule in paragraph (2)(a) of this section for submitting the written report. The Department must approve this limited scope of evaluation in writing and the system must keep that approval with the completed report.

I. Requirements for Remaining on Reduced TTHM and HAA5 Monitoring Based on R.61-58.13 Results.

A system on reduced monitoring under R.61-58.13 may remain on reduced monitoring after the dates identified in R.61-58.15.B for compliance with this subpart only if they qualify for a 40/30 certification under R.61-58.14.E or have received a very small system waiver under R.61-58.14.F, plus they meet the reduced monitoring criteria in R.61-58.15.E(1), and they do not change or add monitoring locations from those used for compliance monitoring under R.61-58.13. If the system's monitoring locations under this part R.61-58.15 differ from the monitoring locations under R.61-58.13, the system may not remain on reduced monitoring after the dates identified R.61-58.15.B for compliance with this part R.61-58.15.

J. Requirements for Remaining on Increased TTHM and HAA5 Monitoring Based on R.61-58.13 Results.

If a system was on increased monitoring under R.61-58.13.C(2)(a), they must remain on increased monitoring until they qualify for a return to routine monitoring under R.61-58.15.G(3). The system must conduct increased monitoring under R.61-58.15.G at the monitoring locations in the monitoring plan developed under R.61-58.15.D beginning at the date identified in R.61-58.15.B for compliance with this part and remain on increased monitoring until they qualify for a return to routine monitoring under R.61-58.15.G(3).

K. Reporting and Recordkeeping Requirements.

(1) Reporting

(a) Systems must report the following information for each monitoring location to the Department within 10 days of the end of any quarter in which monitoring is required:

(i) Number of samples taken during the last quarter.

(ii) Date and results of each sample taken during the last quarter.

(iii) Arithmetic average of quarterly results for the last four quarters for each monitoring location (LRAA), beginning at the end of the fourth calendar quarter that follows the compliance date and at the end of each subsequent quarter. If the LRAA calculated based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters, the system must report this information to the Department as part of the first report due following the compliance date or anytime thereafter that this determination is made. If a system is required to conduct monitoring at a frequency that is less than quarterly, they must make compliance calculations beginning with the first compliance sample taken after the compliance date, unless they are required to conduct increased monitoring under R.61-58.15.G.

(iv) Whether, based on R.61-58.5.P(2)(b) and this part R.61-58.15, the MCL was violated at any monitoring location.

(v) Any operational evaluation levels that were exceeded during the quarter and, if so, the location and date, and the calculated TTHM and HAA5 levels.

(b) Subpart H systems seeking to qualify for or remain on reduced TTHM/HAA5 monitoring, must report the following source water TOC information for each treatment plant that treats surface water or ground water under the direct influence of surface water to the Department within 10 days of the end of any quarter in which monitoring is required:

(i) The number of source water TOC samples taken each month during last quarter.

(ii) The date and result of each sample taken during last quarter.

(iii) The quarterly average of monthly samples taken during last quarter or the result of the quarterly sample.

(iv) The running annual average (RAA) of quarterly averages from the past four quarters.

(v) Whether the RAA exceeded 4.0 mg/L.

(c) The Department may choose to perform calculations and determine whether the MCL was exceeded or the system is eligible for reduced monitoring in lieu of having the system report that information.

(2) Recordkeeping.

Systems must retain any R.61-58.15 monitoring plans and monitoring results as required by R.61-58.6.D.